

# Chapter 14

## Maintain and Replace Host Subsystem Components

This chapter discusses the following topics about maintaining and replacing host subsystem components:

Tools and Parts Required on page 179

Maintain the Host Subsystem on page 179

Take the Host Subsystem Offline on page 180

Replace a Routing Engine on page 180

Maintain the CBs on page 185

Replace a CB on page 185

Replace a PCMCIA Card on page 187

### Tools and Parts Required

Phillips (+) screwdrivers, numbers 1 and 2

Electrostatic bags, one for each component removed

Antistatic mat

ESD grounding wrist strap

Replacement components or blank panels, one for each component removed

### Maintain the Host Subsystem

The host subsystem comprises a Routing Engine and its adjacent Control Board (CB) functioning together. To maintain the host subsystem components, follow these guidelines:

Check the host subsystem (HOST0 and HOST1) LEDs on the craft interface. If the red FAIL LED is lit, look at the LCD display to get more information about the cause of the problem. For more information about the LEDs and the display, see “Craft Interface” on page 20.

Check the LCD display on the craft interface to view information about the router temperature and the status of the Routing Engines.

To check the status of the Routing Engine, use the following CLI command:

```
user@host> show chassis routing-engine
```

To check the status of the CB, use the following CLI command:

```
user@host> show chassis environment cb
```

For more information about using the CLI, see the JUNOS Internet software manuals.

## Take the Host Subsystem Offline

The host subsystem is taken offline and brought online as a unit. Before you replace a Routing Engine or a CB, you take the host subsystem offline. The host subsystem is hot-pluggable.

Normally, if two host subsystems are installed in the router, HOST0 functions as the master and HOST1 functions as the backup. You can remove the backup host subsystem (or either of its components) without interrupting the functioning of the router. If you take the master host subsystem offline, the router reboots and the backup host subsystem becomes master. If the router has only one host subsystem, taking the host subsystem offline causes the router to shut down.

To take a host subsystem offline, follow this procedure:

1. Determine whether the host subsystem is functioning as master or as backup, using one of the two following methods:

Check the host subsystem LEDs on the craft interface. If the green MASTER LED is lit, the corresponding host subsystem is functioning as master.

Display which host subsystem is functioning as master, using the CLI command:

```
user@host> show chassis routing-engine
```

2. If the host subsystem is functioning as master, switch it to backup, using the CLI command:

```
user@host> request chassis routing-engine master switch
```

When you switch the host subsystem from master to backup, the functioning of the router is interrupted for up to several minutes as the system reboots and the new master host subsystem downloads software to the SIBs.

## Replace a Routing Engine

The Routing Engine is hot-pluggable. To replace a Routing Engine, use the following procedures:

Remove a Routing Engine on page 181

Install a Replacement Routing Engine on page 183

Verify That the Routing Engine Is Installed Correctly on page 185

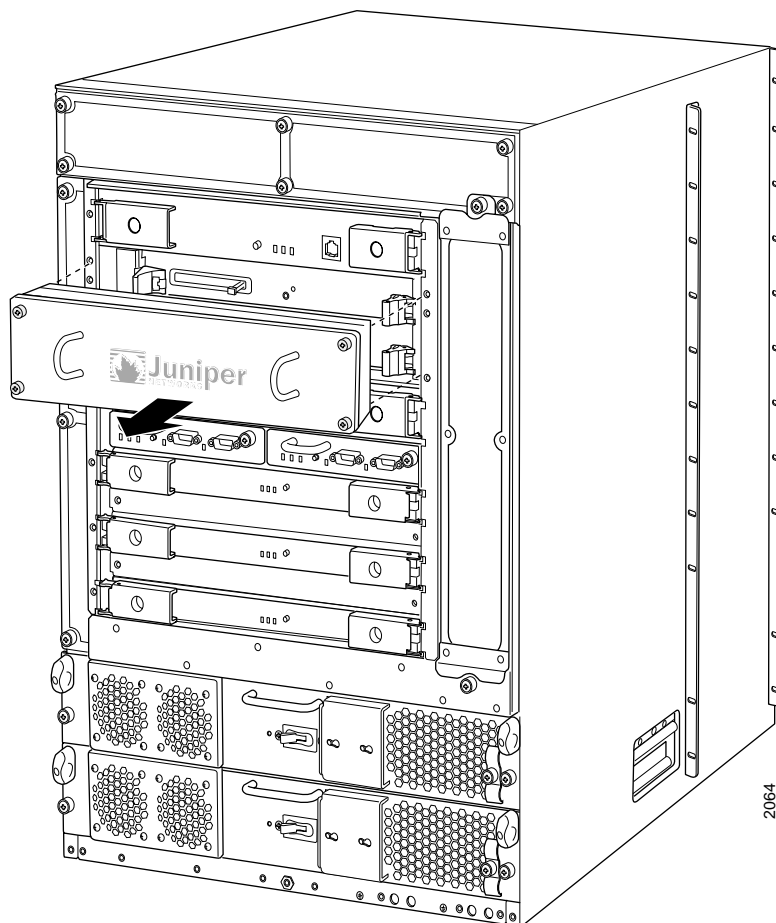
## ***Remove a Routing Engine***

The router can have one or two Routing Engines. They are located in the upper rear of the chassis in the slots marked RE0 and RE1. Each Routing Engine weighs approximately 1.9 lb (0.9 kg).

To remove a Routing Engine, follow this procedure (see Figure 82):

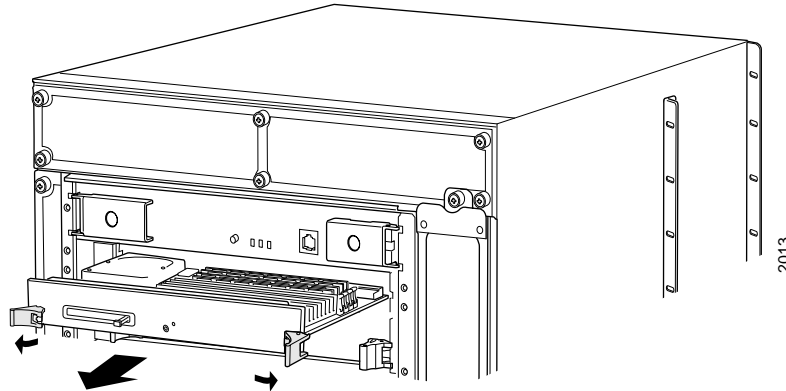
1. Have ready an antistatic mat, placed on a flat, stable surface.
2. Attach an ESD wrist strap to your bare wrist, and connect the wrist strap to one of the ESD points on the chassis.
3. Check whether the Routing Engine is functioning as backup or as master. If necessary, take the host subsystem offline as described in "Take the Host Subsystem Offline" on page 180.
4. Loosen the captive screws on the corners of the Routing Engine cover.
5. Grasping the Routing Engine cover by its edges, pull it free from the chassis (see Figure 81).

Figure 81: Remove the Routing Engine Cover



6. Loosen the slotted screws on the extractor clips on both sides of the Routing Engine faceplate.
7. Press the tabs on the extractor clips on both sides of the Routing Engine faceplate.
8. Flip the extractor clips outwards to unseat the Routing Engine.
9. Grasping the Routing Engine by the extractor clips, slide it about halfway out of the chassis.
10. Move one of your hands underneath the Routing Engine to support it and slide it completely out of the chassis.

Figure 82: Remove a Routing Engine



### ***Install a Replacement Routing Engine***

To install a replacement Routing Engine, follow this procedure (see Figure 83):

1. Attach an ESD wrist strap to your bare wrist, and connect the wrist strap to one of the ESD points on the chassis.
2. Remove the replacement Routing Engine from its electrostatic bag.
3. Hold the Routing Engine by placing one hand underneath to support it and with the other hand grasp one of the extractor clips on the faceplate.
4. Carefully align the sides of the Routing Engine with the guides inside the chassis.
5. Slide the Routing Engine into the chassis until you feel resistance, then press the Routing Engine by its faceplate until it engages the midplane connectors.
6. Press both the extractor clips inwards to seat the Routing Engine.
7. Tighten the slotted screws on both sides of the Routing Engine faceplate.
8. Press the Routing Engine cover into place, then tighten the captive screws on the corners of the cover to secure it to the chassis (see Figure 84).

Figure 83: Install a Replacement Routing Engine

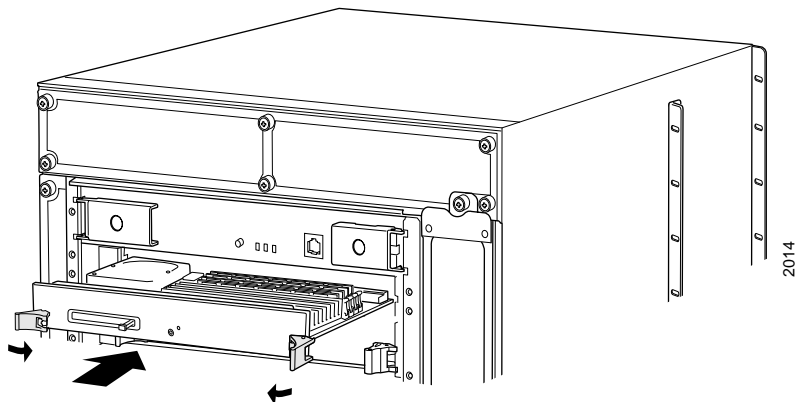
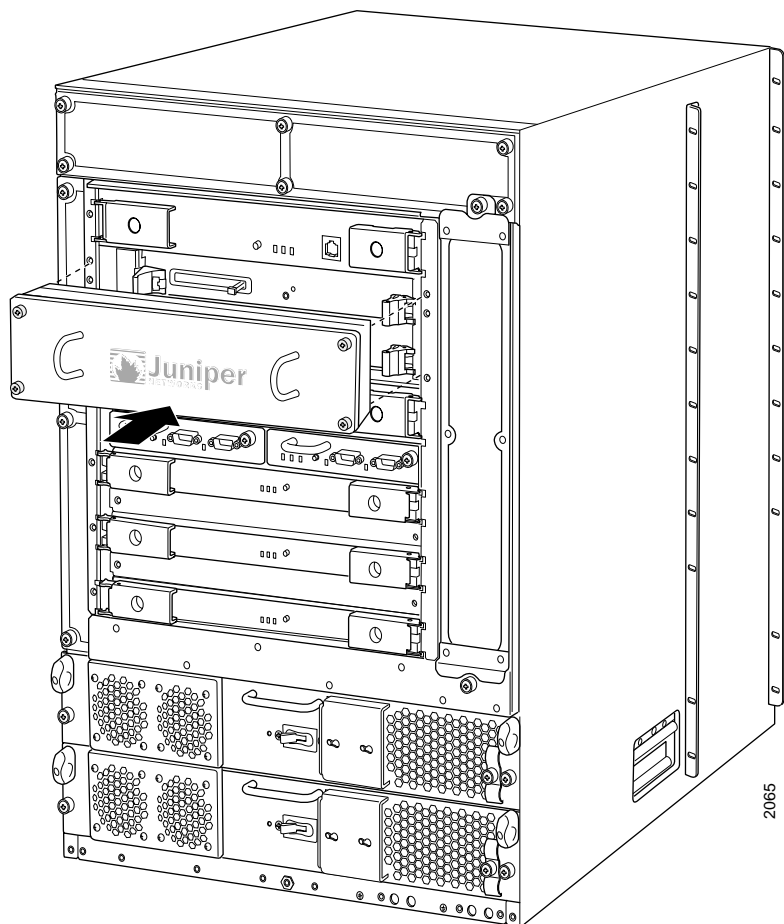


Figure 84: Reinstall the Routing Engine Cover



## **Verify That the Routing Engine Is Installed Correctly**

To verify that the Routing Engine is installed correctly, check the HOST LEDs on the craft interface as soon as you have installed the Routing Engine. If the router is operational and the Routing Engine is functioning properly, the green OK LED is on. If the red FAIL LED is on instead, the Routing Engine is not functioning properly. Contact your customer support representative if the Routing Engine is not functioning properly.

To check the status of the Routing Engine, use the CLI command:

```
user@host> show chassis routing-engine
```

For more information about using the CLI, see the JUNOS Internet software manuals.

## Maintain the CBs

To maintain the CBs, follow these guidelines:

To observe the status of the CBs, check the LEDs on the CB faceplate. For more information on the CB LEDs, see “Control Board (CB)” on page 18.

To check the status of the CBs, use the CLI command:

```
user@host> show chassis environment cb
```

## Replace a CB

The CBs are hot-pluggable. To replace a CB, use the following procedures:

Remove a CB on page 185

Install a Replacement CB on page 186

Verify That the CB Is Installed Correctly on page 187

## **Remove a CB**

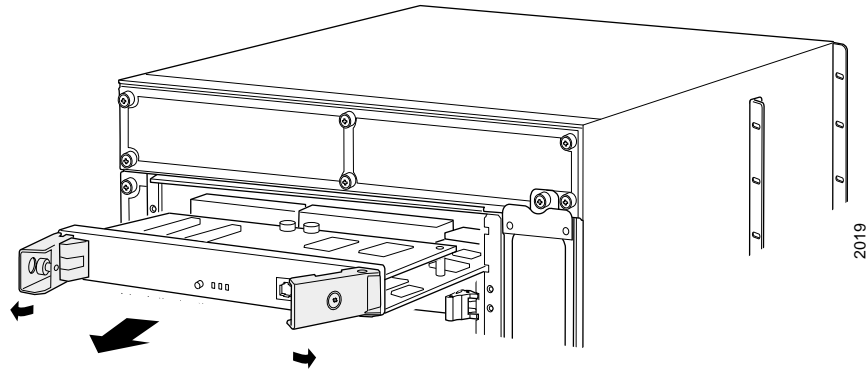
The router can have one or two CBs. They are located in the upper rear of the chassis in the slots marked CBO and CB1. Each CB weighs approximately 5 lb (2.3 kg).

To remove a CB, follow this procedure (see Figure 85):

1. Have ready an antistatic mat, placed on a flat, stable surface.
2. Attach an ESD wrist strap to your bare wrist, and connect the wrist strap to one of the ESD points on the chassis.
3. Check whether the CB is functioning as backup or as master. If necessary, take the host subsystem offline as described in “Take the Host Subsystem Offline” on page 180.
4. Loosen the captive screws on the ejector handles on both sides of the CB faceplate.
5. Flip the ejector handles outwards to unseat the CB.

6. Grasp the ejector handles and slide the CB about halfway out of the chassis.
7. Move one of your hands underneath the CB to support it, and slide it completely out of the chassis.

**Figure 85: Remove a CB**



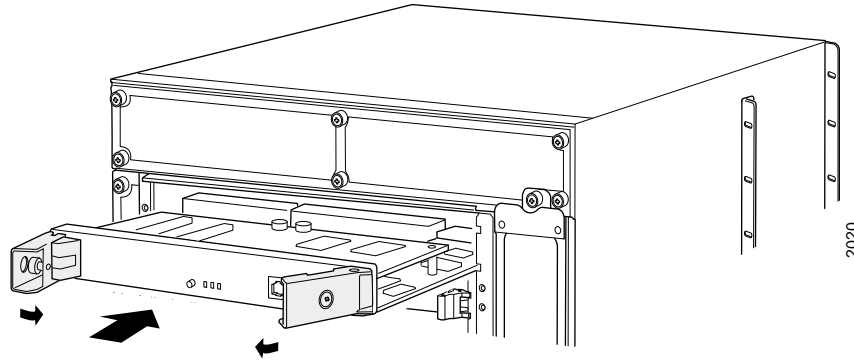
## ***Install a Replacement CB***

To install a replacement CB, follow this procedure (see Figure 86):

1. Attach an ESD wrist strap to your bare wrist, and connect the wrist strap to one of the ESD points on the chassis.
2. Remove the replacement CB from its electrostatic bag.
3. Carefully align the sides of the CB with the guides inside the chassis.
4. Slide the CB all the way into the chassis.
5. Grasp both ejector handles and press them inwards to seat the CB.
6. Tighten the captive screws on the ejector handles.
7. To bring the CB online, press the online/offline button until the green ONLINE LED lights.



Figure 86: Install a Replacement CB



### ***Verify That the CB Is Installed Correctly***

To verify that the CB is functioning normally, check the LEDs on its faceplate. The green ONLINE LED should light steadily.

To check the status of the CB, use the CLI command:

```
user@host> show chassis environment cb
```

## **Replace a PCMCIA Card**

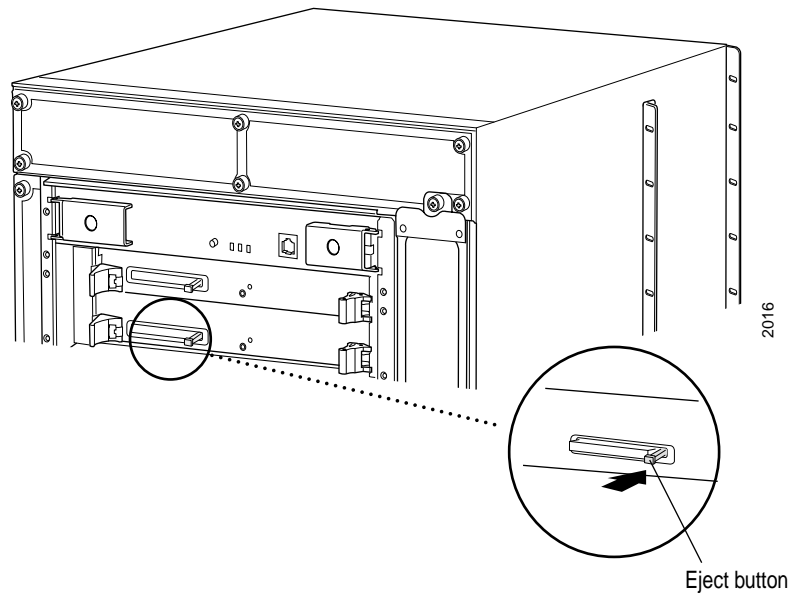
The router uses a PCMCIA card to store software images and upgrades. The PCMCIA card is hot-insertable and hot-removable.

### ***Remove a PCMCIA Card***

The PCMCIA card is inserted into the slot PC CARD on the Routing Engine. To remove the PCMCIA card, follow this procedure (see Figure 87):

1. Remove the Routing Engine cover by loosening the captive screws on the corners of its faceplate.
2. On the Routing Engine faceplate, press the eject button on the right side of the PCMCIA card slot once to release the button, then again to release the PCMCIA card.
3. The PCMCIA card pops partially out of the slot. Grasp the card and pull it completely out of the slot.
4. If you are not immediately replacing the PCMCIA card, reinstall the Routing Engine cover and tighten the screws on the corners of the cover to secure it to the chassis.

Figure 87: Remove a PCMCIA Card



## Install a PCMCIA Card

To install a PCMCIA card, follow this procedure (see Figure 88):

1. If the Routing Engine cover is in place, remove the cover by loosening the captive screws on the corners of its faceplate.
2. Insert the PCMCIA card into the PCMCIA card slot on the Routing Engine, with the Juniper Networks logo facing downwards.



**Caution**

Be sure to insert the PCMCIA card with the label facing downward. Inserting the PCMCIA card incorrectly might damage the Routing Engine.

3. Press the card firmly all the way into the slot.
4. Reinstall the Routing Engine cover and tighten the screws on the corners of the cover to secure it to the chassis.

Figure 88: Install a PCMCIA Card

